ACC.14
TCT@ACC-i2 | innovation in intervention

A1691
JACC April 1, 2014
Volume 63, Issue 12

TCT@ACC-i2: The Interventional Learning Pathway

CORONARY PHYSIOLOGICAL INDICES IN PATIENTS WITH MYOCARDIAL BRIDGING

Oral Contributions
Room 209 C
Saturday, March 29, 2014, 8:45 a.m.-8:55 a.m.

Session Title: Intravascular Physiology and Imaging
Abstract Category: 35. TCT@ACC-i2: IVUS and Intravascular Physiology
Presentation Number: 2902-06

Authors: *Shigemitsu Tanaka, Yasuhiro Honda, Ryotaro Yamada, Yuhei Kobayashi, Ingela Schnittger, Paul Yock, Alan Yeung, Peter Fitzgerald, William Fearon, Jennifer Tremmel, Stanford University Medical Center, Stanford, CA, USA*

Background: Myocardial bridging (MB) can cause both anatomic and functional abnormalities including accelerated proximal plaque and endothelial dysfunction. However, little is known about the microcirculation beyond the bridge or how MB might affect coronary physiologic indices of microvascular function.

Methods: To assess the possible impact of MB, 123 patients with minimal angiographic disease underwent Fractional Flow Reserve (FFR), Coronary Flow Reserve (CFR), and Index of Microcirculatory Resistance (IMR) interrogation in the LAD artery. Pressure and flow (by thermodilution) were measured at rest and maximal hyperemia by IV adenosine using a pressure wire placed beyond the MB. MB was defined by IVUS as an echolucent muscle band (halo) surrounding the artery.

Results: IVUS identified MBs in 56.7% with similar clinical characteristics in MB vs non-MB. The aortic and distal coronary pressures were equivalent between MB and non-MB, whereas the mean transit time was longer in MB patients both at rest and hyperemia. Consequently, FFR and CFR were comparable in MB vs non-MB, while IMR was higher in MB patients. Length of MB, thickness of halo, and % arterial compression did not correlate with IMR, FFR or CFR.

Conclusion: MB was associated with prolonged mean transit time both at rest and hyperemia, suggesting elevated microcirculatory resistance and/or hemodynamic alterations affecting coronary flow indices. Further investigation is warranted to determine the exact mechanisms of these observations.